

Intraspecific diversity of *A. tetracladia* affects plant-litter decomposition in freshwaters  
- **Microbial Ecology - poster presentation**

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Bruno Antunes<sup>#</sup>, José Trabulo<sup>#</sup>, Sofia Duarte, Seena Sahadevan, Fernanda Cássio, Cláudia Pascoal

<sup>#</sup>: both authors gave the same contribution to the work

Centre of Molecular and Environmental Biology (CBMA), Department of Biology,  
University of Minho, Campus de Gualtar, 4710-057 Braga, Portugal

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Aquatic hyphomycetes play a key role in the decomposition of allochthonous plant litter in freshwaters. *Articulospora tetracladia* Ingold is a dominant sporulating species in streams of the Iberian Peninsula. Previous studies showed positive relationships between fungal species richness and plant litter decomposition (Duarte et al 2006) and these relationships are expected to change with the environmental context (Pascoal et al 2010). However, the relationships between intraspecific fungal diversity and key ecological processes remain largely unknown (but see Fernandes et al 2011). We used a microcosm approach to examine the effects of intraspecific diversity of *A. tetracladia* on leaf litter decomposition in the absence and presence of cadmium (Cd). Alder leaves were inoculated with combinations of 1, 2, 4, 6 and 8 strains (4 different genotypes based on internal transcribed spacer region) and the effects were analysed in terms of leaf mass loss and reproductive output. In the absence of Cd, both processes were affected by intraspecific diversity and augmented with increasing number of genotypes. The exposure to Cd significantly reduced leaf decomposition and fungal reproduction, irrespective of the number of genotypes present in the assemblage. The examined functions were greater in mixed genotypes than expected based on individual genotype performances. Moreover, the variance of fungal performances decreased with increasing genotype diversity (portfolio effect). Our data demonstrate the need to consider genetic information when assessing the effects of microbial diversity in ecological processes.

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